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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/630,435

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Hwai-Tzuu Tai

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08/09/2005

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EXAMINER

THOMPSON, JAMES A

ART UNIT

PAPER NUMBER

2624

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/630,435

Applicant(s)

TAI ET AL.

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/18/2005, 2/22/2005, and 4/4/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-16, 18-21, 23-30, 32-35 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/22/05, 4/4/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 18 February 2005 have been fully considered but they are not persuasive.

Regarding page 8, lines 6-24: The cited portion of Yamaguchi (US Patent 5,832,301) specifically states "[w]hen outputting image data stored in the memory to the digital color copier 1000, then image data is transferred to the color printer unit 300 via a color-digital-interface controller 790 to obtain a printer image" [column 5, lines 23-26 of Yamaguchi]. Thus, image data is stored in a *digital* color copier and transferred to the color printer unit of said digital color copier. As is abundantly well-known in the art, printing grayscale levels using a digital printer requires halftone processing. Without halftone processing, the digital copier has no indication, via the appropriate digital data signals, of where to place each individual color dot used to form the halftone image. Thus the changed RIP data, before being printed by said digital color copier, must be halftone processed as a set of rendered gray level data in order to even have the possibility of being printed by said digital color copier.

Yamaguchi specifically teaches that halftoning is used for the output data when printing on the physical medium. For example, in column 3, lines 36-64 of Yamaguchi, the precise manner in which the color printer unit 300 uses the 8-bit lighting level data to generate the printed output clearly describes and demonstrates that traditional halftone processing is indeed used, and thus the changed RIP data must inherently be halftone processed in order to be output. Thus, Yamaguchi

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clearly supports that the changed RIP Data must inherently be subjected to a halftone process to generate halftone rendered gray level data. Further, not only does Yamaguchi support said inherency, but the inherency would have been clear to one of ordinary skill in the art at the time of the invention since halftone processing is such an old and well-known technology. Additionally, even though Examiner has shown that Yamaguchi and the basic knowledge that one of ordinary skill in the art would have had at the time of the invention both support said inherency, Applicant is respectfully requested to fully demonstrate how one would produce a printed output, using the digital color printer taught by Yamaguchi, *without* subjecting the changed RIP Data to a halftone process.

Regarding page 8, line 26 to page 9, line 27: *Applicant alleges* on page 9, lines 8-11 of Applicant's arguments that "[t]he only rationale provided by the Examiner for combining the references consists of the statement in Hayashi that image quality correction circuit 46 'performs an outline emphasis process for enhancing the clarity of the image or a softening process for reducing the stiffness of the image.' This does not serve as motivation to combine the references." *Examiner responds* that Applicant does not adequately explain why the cited passage from Hayashi (US Patent 5,790,282) is not an adequate motivation to combine Hayashi with Yamaguchi. Examiner must assume that Applicant is referring to the arguments regarding claims 14, 19, 24, 28, 33 and 38 since Applicant has not specified to which claims Applicant is referring. All of the limitations of claims 14, 19, 24, 28, 33 and 38 have been taught by either Yamaguchi directly, or by the modification of Yamaguchi according to the teachings of Hayashi. The motivation

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to combine is found completely within the teachings of Hayashi. Thus, Examiner has clearly not used any form of impermissible hindsight reasoning. Applicant is respectfully reminded that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Regarding page 9, line 28 to page 11, line 5: It has already been shown above in the section "Regarding page 8, lines 6-24" that Yamaguchi teaches subjecting the changed RIP Data to a halftone process to generate halftone rendered gray level data.

Applicant argues on page 10, lines 19-20 that "none of the stated processes in Hayashi are halftone processes to generate halftone rendered gray level data". Examiner responds initially that, since Applicant has not specifically stated to which claims the arguments are referring, Examiner must assume that Applicant is arguing with regard to the rejections of claims 14, 19, 24, 28, 33 and 38 in the previous office action, dated 12 November 2004. Claims 14, 19, 24, 28, 33 and 38 do not recite that said first halftone process and said second halftone process are specifically halftone processes to generate halftone rendered gray level data. The first halftone process and second halftone process taught by Hayashi are halftone processes since they are processes which modify halftone data, specifically CMYK separated color halftone data. Further, since CMYK separated

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color halftone data is processed in Hayashi, then the result of the processing would naturally be gray level data for each color separation. In fact,

As discussed in detail in said previous office action, the fact that the halftone data has been processed by passing the CMYK halftone data successively through said image quality correction circuit and said gradation adjustment circuit creates the blending of the two halftone processes since factors from both operations have adjusted said CMYK halftone data before being sent to the output processor (figure 2(48) and column 5, lines 3-6 of Hayashi). Examiner specifically stated that the CMYK halftone data is "effectively blended" [page 7, line 11 of said previous office action]. The word "effectively" is defined as: (1) In an effective way. (2) For all practical purposes; in effect (The American Heritage Dictionary of the English Language, fourth edition). Examiner specifically used the word "effectively" since the two halftone processes produce a blended result when the second halftone process has finished processing the CMYK halftone data. In other words, the resultant effect of processing the CMYK halftone data with the two halftone processors is a blended halftone result. Further, Applicant is respectfully reminded that, although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13, 18, 23, 27, 32 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamaguchi (US Patent 5,832,301).

Regarding claims 13 and 27: Yamaguchi discloses an apparatus (figure 1 and column 2, lines 32-44 of Yamaguchi) comprising a raster image processor (RIP) (figure 4 of Yamaguchi) to provide rasterized color separated (column 4, lines 40-42 of Yamaguchi) contone gray level image data (RIP Data) (column 7, lines 2-6 of Yamaguchi); and an image processor (figure 6(700) and column 5, lines 9-10 of Yamaguchi) for altering the RIP Data in accordance with an operator's adjustments (column 5, lines 16-20 of Yamaguchi), and subjecting the altered RIP Data to a halftone process to generate halftone rendered gray level data (column 5, lines 23-27 of Yamaguchi). Since the resultant image data is output to a color printer unit to obtain a printed image (column 5, lines 23-37 of Yamaguchi), then the altered RIP Data must inherently be halftone processed to generate halftone rendered gray level data. Otherwise, it would not be possible to obtain a printed image.

Regarding claim 18: Yamaguchi discloses rasterizing the input digital image into rasterized image data (RID) (column 7, lines 2-6 of Yamaguchi); separating the RID into separated rasterized contone gray level image data (column 7, lines 11-16

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and column 3, lines 27-31 of Yamaguchi); altering the separated rasterized contone gray level image data in accordance with an operator's adjustments (column 5, lines 16-20 of Yamaguchi); and subjecting the altered rasterized image data to a halftone process to generate halftone rendered gray level data (column 5, lines 23-27 of Yamaguchi). Since the resultant image data is output to a color printer unit to obtain a printed image (column 5, lines 23-37 of Yamaguchi), then the altered RIP Data must inherently be halftone processed to generate halftone rendered gray level data. Otherwise, it would not be possible to obtain a printed image.

Regarding claims 23 and 37: Yamaguchi discloses an apparatus (figure 1 and column 2, lines 32-44 of Yamaguchi) comprising a raster image processor (RIP) (figure 4 of Yamaguchi) to provide rasterized CMYK (column 3, lines 36-40 of Yamaguchi) image data (RIP Data) (column 7, lines 2-6 of Yamaguchi); and an image processor (figure 6(700) and column 5, lines 9-10 of Yamaguchi) for separating the RIP Data into separated CMYK image data (column 5, lines 23-27 of Yamaguchi), and altering the separated CMYK image data in accordance with an operator's adjustments (column 5, lines 16-20 of Yamaguchi), wherein the image processor subjects the altered RIP Data to a halftone process to generate halftone rendered gray level data (column 5, lines 23-27 of Yamaguchi). The image data is originally scanned in and converted into CMYK image data (column 36-40 of Yamaguchi). The RIP data that is stored and altered according to the operator's adjustments (column 5, lines 16-20 of Yamaguchi) is used for printing a color printed image (column 5, lines 23-27 of Yamaguchi). Therefore said image processor must inherently separate the RIP data into separated CMYK image

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data in order to perform conversions (column 5, lines 16-20 of Yamaguchi) and transmit the data for printing (column 5, lines 23-27 of Yamaguchi). Otherwise, the image data will not be in a form that can be printed. Further, since the resultant image data is output to a color printer unit to obtain a printed image (column 5, lines 23-37 of Yamaguchi), then the altered RIP Data must inherently be halftone processed to generate halftone rendered gray level data. Otherwise, it would not be possible to obtain a printed image.

Regarding claim 32: Yamaguchi discloses an apparatus (figure 1 and column 2, lines 32-44 of Yamaguchi) comprising a raster image processor (RIP) (figure 4 of Yamaguchi) to provide rasterized color separated (column 4, lines 40-42 of Yamaguchi) contone gray level image data (RIP Data) (column 7, lines 2-6 of Yamaguchi); and an image processor (figure 6(700) and column 5, lines 9-10 of Yamaguchi) for altering the RIP Data in accordance with an operator's adjustments (column 5, lines 16-20 of Yamaguchi), wherein the image processor subjects the altered RIP Data to a halftone process to generate halftone rendered gray level data (column 5, lines 23-27 of Yamaguchi). Since the resultant image data is output to a color printer unit to obtain a printed image (column 5, lines 23-37 of Yamaguchi), then the altered RIP Data must inherently be halftone processed to generate halftone rendered gray level data. Otherwise, it would not be possible to obtain a printed image.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14, 16, 19, 21, 24, 26, 28, 30, 33, 35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (US Patent 5,832,301) in view of Hayashi (US Patent 5,790,282).

Regarding claims 14, 19, 24, 28, 33 and 38: Yamaguchi does not disclose expressly that the image processor subjects the altered (or changed) image data to first and second halftone processes and then blends the respective outputs from the first and second halftone processes to provide a blended output. In claims 14, 28 and 33, said image data is RIP Data. In claim 19, said image data is separated rasterized contone gray level image data. In claims 24 and 38, said image data is separated CMYK image data. The image data is operated upon in claims 14, 19, 24, 28, 33 and 38 in the same way. The image data that is input has already been discussed in the rejections under 35 U.S.C. §102(b), listed above in items 2-3.

Hayashi discloses subjecting image data to a first halftone process (figure 2(46) and column 4, lines 63-67 of Hayashi) and a second halftone process (figure 2(47) and column 4, line 67 to column 5, line 3 of Hayashi), and then blending the respective outputs from said first and second halftone processes to provide

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a blended output (figure 2(48) and column 5, lines 3-6 of Hayashi). The image data is saturation adjusted by the color correction circuit (figure 2(43) and column 5, lines 18-20 of Hayashi). Said image data is then sent through two halftone processing devices. Said devices are the image quality correction circuit (figure 2(46) and column 4, lines 63-67 of Hayashi) and the gradation adjustment circuit (figure 2(47) and column 4, line 67 to column 5, line 3 of Hayashi). Since the CMYK halftone data is processed by passing said CMYK halftone data successively through said image quality correction circuit and said gradation adjustment circuit, said CMYK halftone data is effectively blended since factors from both operations have adjusted said CMYK halftone data before being sent to the output processor (figure 2(48) and column 5, lines 3-6 of Hayashi).

Yamaguchi and Hayashi are combinable because they are from the same field of endeavor, namely halftoning and image processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform the two halftone processes and the blending process taught by Hayashi to the image data with the image processor taught by Yamaguchi. The motivation for doing so would have been that both halftone operations improve the overall quality of the resultant image (column 4, lines 65-67 and column 5, lines 1-3 of Hayashi). Therefore, it would have been obvious to combine Hayashi with Yamaguchi to obtain the invention as specified in claims 14, 19, 24, 28, 33 and 38.

Regarding claims 16, 21, 26, 30 and 35: Yamaguchi does not disclose expressly that the image data is recorded on a recording surface as a color separation image, and plural color separation images are recorded and eventually transferred to a

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receiver sheet in superposed registered relationship to form a processed color image. In claims 16, 30 and 35, said image data is RIP Data. In claim 21, said image data is separated rasterized contone gray level image data. In claim 26, said image data is separated CMYK image data. The image data is operated upon in claims 16, 21, 26, 30 and 35 in the same way. The image data that is input has already been discussed in the rejections under 35 U.S.C. §102(b), listed above in items 7-8.

Hayashi discloses that image data is recorded on a recording surface (column 3, lines 35-54 of Hayashi) as a color separation image (column 3, lines 33-34 and lines 60-67 of Hayashi), and plural color separation images are recorded and eventually transferred to a receiver sheet in superposed registered relationship (column 3, lines 54-59 of Hayashi) to form a process color image (column 3, lines 60-67 of Hayashi).

Yamaguchi and Hayashi are combinable because they are from the same field of endeavor, namely halftoning and image processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to print an image and plural color separation images on a receiver sheet in superposed registered relationship, as taught by Hayashi. The motivation for doing so would have been to provide an output for the resultant color image (column 3, lines 33-34 of Hayashi). Therefore, it would have been obvious to combine Hayashi with Yamaguchi to obtain the invention as specified in claims 16, 21, 26, 30 and 35.

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6. Claims 15, 20, 25, 29, 34 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (US Patent 5,832,301) in view of Hayashi (US Patent 5,790,282) and Miller (US Patent 5,731,823).

Regarding claims 15, 20, 25, 29, 34 and 39: Yamaguchi does not disclose expressly that the image processor modifies the blended output into a binary file and subjects the binary image file to an edge enhancement process to reduce the jaggedness in the image.

Hayashi discloses modifying the blended output into a binary image file. After the image data is processed, said image data is sent to the output control circuit, which then generates the signals needed to output said image data (column 5, lines 1-6 of Hayashi). In order to output said image data after processing, the creation of a binary image file for the output in some form, whether on a hard drive, in RAM, et cetera, is inherently required. Otherwise, there would no longer be any data to access for the purpose of output.

Yamaguchi and Hayashi are combinable because they are from the same field of endeavor, namely halftoning and image processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to take the output of the blending operation and modify said output into a binary image file, as taught by Hayashi. The motivation for doing so would have been to have the binary data with which to produce an output signal for the printer (column 5, lines 4-6 of Hayashi). Therefore, it would have been obvious to combine Hayashi with Yamaguchi.

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Yamaguchi in view of Hayashi does not disclose expressly that the image processor subjects the binary image file to an edge enhancement process to reduce jaggedness in the image.

Miller discloses subjecting the binary image file to an edge enhancement process to reduce jaggedness in the image (column 9, lines 50-52 of Miller).

Yamaguchi in view of Hayashi is combinable with Miller because they are from the same field of endeavor, namely halftoning and image processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to enhance the edges in the binary image file, thus reducing the jaggedness in the image. The motivation for doing so would have been to enhance the edge definition in the image (column 9, lines 51-52 of Miller). Therefore, it would have been obvious to combine Miller with Yamaguchi in view of Hayashi to obtain the invention as specified in claims 15, 20, 25, 29, 34 and 39.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624



JAT
25 July 2005

THOMPSON
~~JOHN~~ LEE
PRIMARY EXAMINER